

We Claim:

1. A method for transmitting channel quality information in a wireless communication system comprising at least one base station and at least one mobile station, the method comprising:

5 varying a rate for reporting channel quality information from a mobile station to a base station as a function of the presence or absence of a transmission from the base station to the mobile station.

2. The method according to claim 1, wherein the mobile station reports channel quality information at a first rate in the absence of a transmission from the base station and at a second rate in the presence of a transmission from the base station.

3. The method according to claim 1, wherein the mobile station reports channel quality information at a first rate in the absence of a transmission from the base station and, upon detection of a transmission from the base station, the mobile station reports channel quality information at a second rate for a prescribed duration.

4. The method according to claim 1, wherein the mobile station reports channel quality information at a first rate in the absence of a transmission from the base station and, upon detection of a transmission from the base station, the mobile station reports channel quality information at a plurality of rates over a prescribed time period after detection of the transmission, wherein the plurality of rates are different than the first rate.

5. The method according to claim 4, wherein the prescribed time period includes a plurality of time intervals such that the channel quality information is reported at one of the plurality of rates during one of the plurality of time intervals.

6. The method according to claim 2, wherein the second rate is faster than the first rate.

7. The method according to claim 6, further comprising the step of estimating channel quality at the base station while the mobile station is reporting at

the second rate, wherein estimated channel quality is used to derive a transmission format for a subsequent transmission.

8. The method according to claim 7, wherein the transmission format
5 includes one or more parameters selected from the group consisting of modulation format, number of codes, and transmission rate.

9. The method according to claim 6, further comprising the step of
estimating channel quality at the base station while the mobile station is reporting at
10 the second rate, wherein estimated channel quality is used to calculate an amount of redundancy needed for a retransmission of a previous transmission.

10. The method according to claim 1, wherein the channel quality
information comprises a transmission rate calculated by the mobile station based on
15 one or more channel conditions.

11. A method for adapting the rate of reporting channel quality information
in a wireless communication system including at least one base station and at least
one mobile station, the method comprising:

20 reporting channel quality information from the at least one mobile station to
the at least one base station at a first rate in the absence of a transmission from the
at least one base station to the at least one mobile station; and

in the presence of a transmission from the at least one base station to the at
least one mobile station, adapting the rate for reporting channel quality information
25 from the at least one mobile station to the at least one base station from the first rate
to a second rate.

12. The method according to claim 11, wherein the second rate is faster
than the first rate.

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13. A method for transmitting channel quality information in a wireless
communication system including at least one base station and at least one mobile
station, the method comprising:

varying a rate for reporting channel quality information from a mobile station to a base station as a function of the number of base stations that the mobile station is communicating with.

- 5 **14.** The method according to claim **13**, wherein the mobile station reports channel quality information at a first rate when the mobile station is communicating with one base station and wherein the mobile station reports channel quality information at a second rate when the mobile station is communicating with a plurality of base stations.

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- 15.** The method according to claim **14** wherein the second rate is faster than the first rate.